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# United States Patent [19]

Higashi et al.

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[54] **RAKE RECEIVER**

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[30] **Foreign Application Priority Data**

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[58] Field of Search ..... **375/200, 367, 375/208; 370/335, 320, 206**

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[57] **ABSTRACT**

A RAKE receiver which is employed in a direct sequence spread spectrum communication system, and which can effectively receive multipath signals. A path searcher measures the amplitude of each path, selects N paths with larger amplitudes in descending order of magnitude, where N is the number of despreaders, and assigns the despreaders to the selected paths to despread the signals of the paths. This assignment of the despreaders to the paths is carried out such that a path with a large amplitude and a path with a small amplitude are assigned to adjacent despreaders and are input to the same pre-detection combiner. The outputs of the despreaders are combined by the pre-detection combiners, and detected by detectors whose outputs are RAKE combined by a post-detection combiner.

**8 Claims, 8 Drawing Sheets**

